

IOWA STATE UNIVERSITY

2013 Legislative Agenda

Leading the Bioeconomy Initiative

Iowa needs to own the brand as the place for biofuels and biobased products.

We must promote a vision of Iowa as the place that not only excels in growing crops, producing biofuels and raising livestock and poultry, but that is home to the next generation of biorenewables and biorefineries and the crop and animal agriculture that will define it. Iowa is where that vision becomes reality. The vision foresees companies making Iowa their destination, not only to take advantage of low feedstock costs, but because Iowa has nurtured and developed *a knowledge and innovation center for biorenewables*.

Iowa State University is that center.

Iowa State's research advances in biosciences and engineering have expanded the vision of the bioeconomy, through higher yielding, more resilient crops, reduced inputs for production of crop and livestock products; sustainable manufacture of biorenewable chemicals, materials and finished products; advanced biofuels; and more efficient use of energy.

Iowa State University can help Iowa ensure national leadership in emerging bioeconomy.

Iowa has done well to date in anticipating before others the rapidly changing landscape of this field. More than ever, science is challenged to show more commercial impact to lead economic development by developing fundamental discoveries into practical technologies and products.

Iowa State University is well-positioned to lead this transformational research. ISU's world-class, collective strengths in agriculture and engineering and past investments made in state-of-the-art laboratories; pilot-scale, business-friendly research facilities; and on-farm research and demonstration make it an attractive partner.

Iowa State has a proven track record showing excellent return on investment to society — industry and businesses, communities and farmers — from investments made in agricultural and biosciences and engineering innovation.

"ISU's investment and commitment to biorenewables was an important factor in the selection of central Iowa as the location for our first commercial biorefinery based on cellulosic feedstock. The strong relationships we have forged with Iowa State researchers will provide a growing number of applied and advanced research opportunities for partnering with Iowa State faculty focused on biorenewables."

**— Jim Collins, President,
DuPont Industrial
Biosciences**

Iowa State's bioeconomy efforts leverage state resources dramatically.

Over the past several years, Iowa State has successfully competed for \$150 million in research grants and contracts in the bioeconomy and biosciences. Recently, the National Science Foundation added another \$12 million to the Center for Biorenewable Chemicals — making federal investment now \$30.5 million over 8 years. The center at ISU leads efforts to transform the industrial chemical industry from petroleum-based to biorenewables-based, partnering with the best scientists and reaching out in educational efforts to pre-college students in the Des Moines schools.

Iowa State has received major federal agency grants in areas of sustainable biofuels production (\$25 million, USDA); renewable energy/energy efficiency research (\$20 million, NSF EPSCoR); climate adaptation in corn-based cropping systems (\$20 million, USDA); disease technology to improve soybean production (\$9.2 million, USDA); enhanced biofuel production/bioengineering and double-cropping (\$6.4 million, DOE-ARPA-E); adapting kernel metabolism to enhance cereal yield (\$5 million, USDA); and improving feed efficiency and production in animal agriculture (\$15 million in multiple grants, USDA).

Iowa State University has received over \$30 million in industry support for biorenewables research since 2007. ISU's Bioeconomy Institute has an on-going biofuels research program with Phillips 66 worth \$20 million to date. More than \$11 million in industry support has enhanced research and facilities at ISU's BioCentury Research Farm, from sources that include DuPont/Pioneer, Vermeer, John Deere and Johnson & Johnson. DuPont/Pioneer have contributed \$1 million annually on biomass harvesting, storage and transportation research.

Future or upcoming leverage opportunities both federally and privately continue to look very promising. In fall 2012, ISU has several multimillion dollar proposals and applications in varying stages of development for federal agencies of DOE, USDA, NSF and NIH. The proposals target new discoveries in thermochemical biofuels, biomass research and development, animal-based bioeconomy and more. Discussions on expanded efforts with companies like BP, Exxon Mobile and DuPont continue.

"Leading the Bioeconomy" Initiative: Maintaining Iowa's Leadership Position

As other states apply pressure in efforts to position themselves as leaders in the bioeconomy, the success Iowa State has achieved in leveraging base state funding is a strong indicator of its commitment to keeping Iowa number one. Iowa State's request for an additional \$7.5 million in base funding will promote the expansion of the state's economy in exciting new directions. This new investment will keep the pressure on other states to try to match the unique environment in Iowa that supports future-focused research, innovation and growth of public-private partnerships. The Leading the Bioeconomy Initiative is about the future — not only in science and engineering, but in the education of Iowa State students who benefit through their active participation with faculty in research and training in biorenewables projects. Iowa's vision should include making the state *the place* for well-prepared graduates to pursue exciting career opportunities in the bioeconomy. Iowa also must be the source for new ideas and discoveries that will move the bioeconomy forward for the benefit of Iowa.